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10/526,914	03/07/2005	Thinh T. Nguyen	MOL0667	7540

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J R Deshmukh
458 Cherry Hill Road
Princeton, NJ 08540

EXAMINER

EMPIE, NATHAN H

ART UNIT	PAPER NUMBER
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1712

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/526,914	Applicant(s) NGUYEN, THINH T.	
	Examiner NATHAN H. EMPIE	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 22-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-21 in the reply filed on 3/3/10 is acknowledged.
2. Claims 22-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/3/10.

Preliminary Amendment

3. Applicant had filed a Preliminary Amendment to the claims on 3/7/05. Such an amendment is in violation of patent rule §1.121.
4. With regard to manner of making amendments in applications:
5. Amendments to a claim must be made by rewriting the entire claim with all changes (e.g., additions and deletions) as indicated in this subsection, except when the claim is being canceled. Each amendment document that includes a change to an existing claim, cancellation of an existing claim or addition of a new claim, must include a complete listing of all claims ever presented, including the text of all pending and withdrawn claims, in the application. The claim listing, including the text of the claims, in the amendment document will serve to replace all prior versions of the claims, in the application. In the claim listing, the status of every claim must be indicated after its claim number by using one of the following identifiers in a parenthetical expression: (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered). Refer further to patent rule §1.121 for additional guidance.
6. For purposes of advancing prosecution, the examiner is currently waving patent rule 1.121 and is examining the claims as they are intended to be amended (replacing the improper multiple dependant language). However; the examiner requests the applicant's next response include a complete listing of the marked up / amended claims meeting the guidelines of patent rule §1.121.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1- 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

10. In the present instance, claim 1 recites the broad recitation "of at least 0.3 and preferably no more than 2", and the claim also recites "in particular in the range from 0.8 to 1.4" which is the narrower statement of the range/limitation. Claim 1 additionally recites the broad recitation "of at least 0.35 and preferably no more than 2.5", and the claim also recites "in particular in the range from 0.9 to 1.7" which is the narrower statement of the range/limitation.

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11. Claim 3 recites the broad recitation "in an amount of 1 to 50 weight %", and the claim also recites "preferably 1 to 30 weight %", and "even more preferably 5 to 15 weight %" which are narrower statements of the range/limitation.

12. Claim 5 recites the broad recitation "in an amount of 1 to 15 weight %", and the claim also recites "preferably 1 to 10 weight %", and "in particular 1 to 5 weight %" which are narrower statements of the range/limitation.

13. Claim 6: recites the broad recitation "smaller than 75 micron", and the claim also recites "smaller than 50" and "in particular from 5 to 45 micron" which are narrower statements of the range/limitation.

14. Claim 15: recites the broad recitation "range from 800° to 1400°C", and the claim also recites "from 850° to 1150°C" which is narrower statements of the range/limitation.

15. Claim 16: recites the broad recitation "for 1 to 48 hours", and the claim also recites "for 5 to 24 hours" which is narrower statements of the range/limitation.

16. Claim 18: recites the broad recitation "a component of a metal electrowinning cell", and the claim also recites "in particular an aluminum electrowinning cell" which is narrower statements of the range/limitation.

17. Claim 19: recites the broad recitation "a current carrying anodic component ", and the claim also recites "in particular an active anode structure or an anode stem" which is narrower statements of the range/limitation.

18. For purposes of examination, the examiner will interpret such narrower language is merely exemplary of the remainder of the claim, and therefore not required.

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19. The dependant claims do not cure the defects of the claims from which they depend.

Double Patenting

20. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-21 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-20, and 26-27 of U.S. Patent No. 7,255,893 (hereafter '893). Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Claim 1: '893 teaches a method of forming a hematite-containing protective layer on a metal-based substrate for use in a high temperature oxidising and/or corrosive environment {see, for example, claim 1, lines 29-32}: comprising:

applying onto the substrate a mass of particles comprising hematite (Fe.sub.2O.sub.3) {see, for example, claim 1, lines 33-37}

and one of: (a) iron metal (Fe) with a weight ratio Fe/Fe.sub.2O.sub.3 of in particular in the range from 0.6 to 1.3 {see, for example, claim 1, lines 38-40};

or (b) ferrous oxide (FeO) with a weight ratio FeO/Fe.sub.2O.sub.3 of no more than 2.5, in particular in the range from 0.9 to 1.7 {see, for example, claim 1 lines 41-43};

and (c) iron metal (Fe) and ferrous oxide (FeO), with weight ratios Fe/Fe.sub.2O.sub.3 and FeO/Fe.sub.2O.sub.3 that are in pro rata with the ratios of (a) and (b) {see, for example, claim 1, lines 44-46};

and consolidating the applied mass of particles to form the hematite-containing protective layer by heat treating the mass of particles to: 1) oxidise when present the

iron metal (Fe) into ferrous oxide (FeO); 2) sinter the hematite to form a porous sintered hematite matrix; and 3) oxidise into hematite (Fe.sub.2O.sub.3) the ferrous oxide (FeO), present in the mass of particles as such and/or in the form of the oxidised iron metal, to fill the sintered hematite matrix {see, for example, claim 1 lines 55-65}.

Claim 2: '893 further teaches wherein the mass of particles further comprises at least one additive selected from oxides of titanium, yttrium, ytterbium, tantalum, manganese, zinc, zirconium, cerium and nickel and/or heat-convertible precursors thereof {see, for example, claim 1 line 50-53, and claim 3}.

Claim 3: '893 further teaches wherein the additive(s) is/are present in the protective layer in an amount of 1-15 weight %, preferably 5-12 weight % {see, for example, claim 4}.

Claim 4: '893 further teaches wherein the protective layer further comprises one or more metals selected from Cu, Ag, Pd, Pt, Co, Cr, Al, Ga, Ge, Hf, In, Ir, Mo, Mn, Nb, Os, Re, Rh, Ru, Se, Si, Sn, Ti, V, W, Li, Ca, Ce and Nb and oxides thereof, which are added as such and/or as precursors to the mass of particles {see, for example, claim 5}.

Claim 5: '893 further teaches wherein the protective layer comprises said at least one metal and/or oxide thereof, in particular copper and/or copper oxide, in a total amount of from 1 to 3 weight % {see, for example, claim 6}.

Claim 6: '893 further teaches, wherein the mass of particles is made of particles that are from 5 to 45 micron {see, for example, claim 7}.

Claim 7: '893 further teaches, wherein the metal-based substrate is metallic, a ceramic, a cermet or metallic with an integral oxide layer {see, for example, claim 8}.

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Claim 8: '893 further teaches, wherein the metal-based substrate comprises at least one metal selected from chromium, cobalt, hafnium, iron, molybdenum, nickel, copper, niobium, platinum, silicon, tantalum, titanium, tungsten, vanadium, yttrium and zirconium {see, for example, claims 8 and 9}

Claim 9: '893 further teaches wherein the metal-based substrate comprises an alloy of iron, in particular an iron alloy containing nickel and/or cobalt {see, for example, claim 10}.

Claim 10: '893 further teaches the method comprising oxidising the surface of a metallic substrate to form an integral anchorage layer thereon to which the protective layer is bonded by sintering during heat treatment, in particular an integral layer containing an oxide of iron and/or another metal, such as nickel, that is sintered during heat treatment with iron oxide from the mass of particles {see, for example, claim 11}.

Claim 11: '893 further teaches wherein the mass of particles is applied as a slurry onto the substrate {see, for example, claim 12}.

Claim 12: '893 further teaches wherein the slurry comprises an organic binder, in particular a binder selected from polyvinyl alcohol, polyvinyl acetate, polyacrylic acid, hydroxy propyl methyl cellulose, polyethylene glycol, ethylene glycol, hexanol, butyl benzyl phthalate and ammonium polymethacrylate {see, for example, claim 13}.

Claim 13: '893 further teaches wherein the slurry comprises an inorganic binder, in particular a colloid, such as a colloid selected from lithia, beryllium oxide, magnesia, alumina, silica, titania, vanadium oxide, chromium oxide, manganese oxide, iron oxide, gallium oxide, yttria, zirconia, niobium oxide, molybdenum oxide, ruthenia, indium oxide,

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tin oxide, tantalum oxide, tungsten oxide, thallium oxide, ceria, hafnia and thoria, and precursors thereof such as hydroxides, nitrates, acetates and formates thereof, all in the form of colloids; and/or an inorganic polymer, such as a polymer selected from lithia, beryllium oxide, alumina, silica, titania, chromium oxide, iron oxide, nickel oxide, gallium oxide, zirconia, niobium oxide, ruthenia, indium oxide, tin oxide, hafnia, tantalum oxide, ceria and thoria, and precursors thereof such as hydroxides, nitrates, acetates and formates thereof, all in the form of inorganic polymers. {see, for example, claim 14}.

Claim 14: '893 further teaches wherein the inorganic binder is sintered during the heat treatment with an oxide of an anchorage layer which is integral with the metal-based substrate to bind the protective layer to the metal-based substrate {see, for example, claim 11 and claim 15}.

Claim 15: '893 further teaches wherein the mass of particles is consolidated on the substrate by heat treatment at a temperature in the range from 800.degree. to 1400.degree. C., in particular from 850.degree. to 1150.degree. C {see, for example, claim 16}.

Claim 16: '893 further teaches wherein the mass of particles is consolidated on the substrate by heat treatment for 1 to 48 hours, in particular for 5 to 24 hours {see, for example, claim 17}.

Claim 17: '893 further teaches wherein the mass of particles is consolidated on the substrate by heat treatment in an atmosphere containing 10 to 100 mol % O.sub.2 {see, for example, claim 18}.

Claim 18: '893 further teaches a method for manufacturing a component of a metal electrowinning cell, in particular an aluminum electrowinning cell, which during use is exposed to molten electrolyte and/or cell fumes and protected therefrom by said protective layer {see, for example, claim 19}.

Claim 19: '893 further teaches a method for manufacturing a current carrying anodic component, in particular an active anode structure or an anode stem {see, for example, claim 20}.

Claim 20: '893 further teaches the method of claim 18 for manufacturing a cover {see, for example, claim 26}.

Claim 21: '893 further teaches the method of claim 20, comprising consolidating the mass of particles to form the protective layer by heat treating the cell component over the cell {see, for example, claim 27}.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHAN H. EMPIE whose telephone number is (571)270-1886. The examiner can normally be reached on M-F, 6:45- 4:15 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571) 272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nathan H Empie/
Examiner, Art Unit 1712